Michigan Department of Community Health

MI PRAMS Delivery

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Intimate Partner Violence and Postpartum Contraception Use, MI PRAMS 2004-2008

According to the National Violence Against Women Survey, 1 in 4 women experience rape, physical assault, or stalking by an intimate partner in their lifetime.[1] This prevalence would be even higher if the Centers for Disease Control and Prevention's (CDC) more comprehensive definition of intimate partner violence (IPV) were used. The CDC defines IPV as any of the following behaviors perpetrated by a current or former spouse/dating partner: physical violence, sexual violence, emotional abuse, or threats of violence.[2]

IPV before and during pregnancy has been shown to lead to poor maternal outcomes such as hypertension, infection, placental problems, and mood disorders, including post traumatic stress disorder.[3,4] It has also been implicated as a cause of negative neonatal outcomes (e.g. preterm birth, low birth weight, small for gestational age).[3,4]

IPV may contribute to the racial disparities in perinatal outcomes, although more research is needed to fully understand the intersection between race, socioeconomic status (SES), and IPV in this context.[4]

Recent research also suggests that IPV may be related to unintended pregnancy and reduced contraceptive use, perhaps due, at least in part, to abusive partners' control over women's contraceptive use.[5,6]

This issue of the MI PRAMS Delivery explores the relationship between IPV and women's contraceptive use at the time of the PRAMS survey. ◊

Inside This Issue:

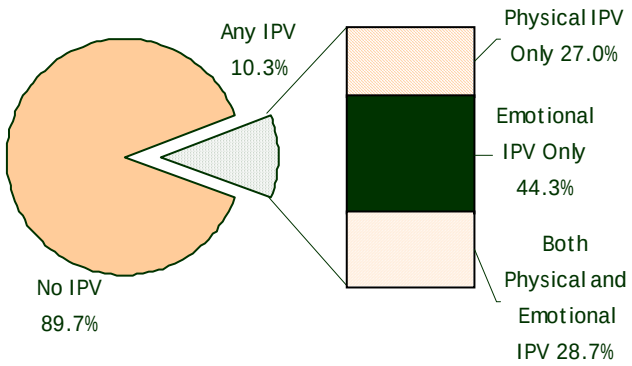
Prevalence of Physical and Emotional IPV Measured by MI PRAMS, 2004-2008

PRAMS respondents were asked a series of questions about whether they had experienced IPV before and during their most recent pregnancy. Women who reported physical violence by a partner or ex-partner during the 12 months before or during pregnancy were classified as having experienced physical IPV.

Those who reported being called names, told they were ugly or worthless, verbally threatened, or who felt controlled or isolated by a partner or someone close to them during the 12 months before delivery were categorized as having experienced emotional IPV. (Sexual violence is measured by MI PRAMS, but was not included in this analysis due to the small number of women who reported *yes*.)

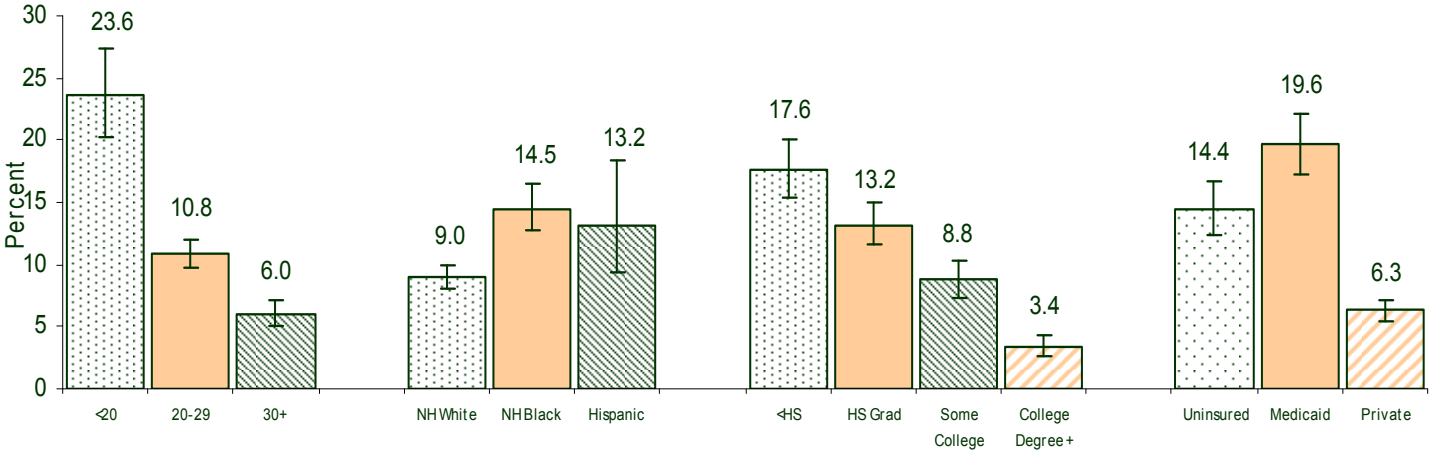
Figure 1 shows that overall, 10% of women delivering a live birth reported either physical or emotional IPV around the time of pregnancy. Of these women, nearly a third were subjected to both physical and emotional IPV, about a quarter suffered from physical violence, and the remaining 44% endured emotional abuse or threats of violence.◊

Figure 1. Prevalence of Intimate Partner Violence by Type, MI PRAMS 2004-2008



Demographic Characteristics of Women Delivering a Live Birth Who Reported IPV, MI PRAMS 2004-2008

Figure 2. Prevalence of Physical IPV by Selected Demographic Characteristics, MI PRAMS 2004-2008



The demographic characteristics of women who reported either physical (Figure 2) or emotional (Figure 3) IPV before or during pregnancy followed the same general patterns found in previous studies.[3-6] Most strik-ingly, teens were much more likely to report both physical (23.6%) and emotional (20.4%) IPV than older mothers.

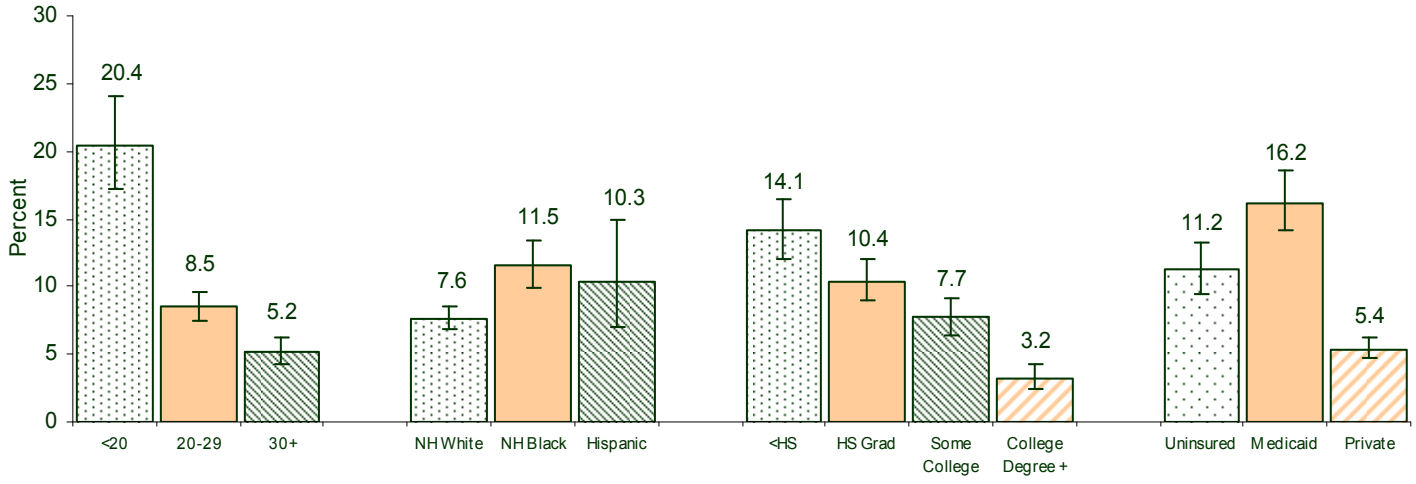
More non-Hispanic black moms reported both physical (14.5%) and emotional (11.5%) IPV than non-Hispanic white moms (9.0% and 7.6%, respectively). Hispanic moms seem to have experienced both types of IPV at percentages similar to black women, but the 95% confidence intervals do not show the differ-ences to be statistically signif-icant.

There was a clear gradient to both physical and emotional IPV with respect to education: women with higher levels of educational attainment were less likely to report IPV compared to those with lower levels.

Finally, women with private insurance coverage before pregnancy had the lowest prevalence of both physical (6.3%) and emotional (5.4%) IPV, followed by those who where uninsured (14.4% and 11.2%, respectively). Moms who were Medicaid recipients before pregnancy reported both modes of IPV significantly more often than women in the other insurance groups, with physical IPV occuring in about 1 out of 5 women receving Medicaid.

These figures highlight the disparities in IPV reported by mothers in Michigan according to age, race/ethnicity, and SES. Although there is currently a knowledge gap regarding how these factors are related to both IPV and adverse perinatal outcomes, the information in Figures 2 and 3 can be used to target groups at high risk when designing and implementing IPV intervention strategies. (See Page 3 for current Michgian public health IPV initiatives and IPV related educational opportunities.) ◇

Figure 3. Prevalence of Emotional IPV by Selected Demographic Characteristics MI PRAMS 2004-2008



Association Between IPV and Postpartum Contraceptive Use, PRAMS 2004-2008

Based on the results of previous research, enduring IPV may lower women's likelihood of contraceptive use.[6] To test this association among the MI PRAMS population, a multivariate logistic regression model was developed using a combined IPV variable as the independent variable of interest and contraception use at the time of survey as the outcome variable.

IPV was categorized into three levels: No IPV, either physical or emotional IPV, and both physical and emotional IPV. (For more information about why this variable was constructed, see the Epi Corner on Page 4.)

Potential confounders considered for the model were maternal age, race/ethnicity, education level, marital status, and parity. Of these, age, education level, and parity were found to be significant confounders in the relationship between IPV and postpartum contraceptive use and were included in the final model.

Table 1 displays the effects of each level of IPV and the confounding variables on the outcome, while holding the other variables constant. This statistical "adjustment" allows one to assess the result of IPV on postpartum contraceptive use by removing the confounding effects of age, education level, and parity.

The odds ratio for either physical or emotional IPV reveals that the odds of using any contraception method at the time of survey was reduced by 30% among women who experienced one type of IPV, when compared to women who reported no IPV. The odds of contraceptive use at survey was 60% less among women experiencing both IPV types compared to no IPV. The results depict an inverse dose-response relationship: as the number of reported types of IPV increased, the likelihood of contraceptive use decreased. This means that women who experience both types of violence may be even less likely to use contraception than those who suffer one form of IPV.

These findings support the evidence that IPV can lead to decreased contraceptive use. However, more research is needed to explore the possible reasons for this association. ◇

Table 1. Logistic Regression Results for the Effects of Number of IPV Types and Confounding Variables on Postpartum Contraceptive Use, MI PRAMS 2004-2008

Factor	Odds Ratio	95% Confidence Interval
No IPV	1.0	Reference
Physical or Emotional IPV	0.7	(0.5 - 1.0)
Both Physical & Emotional IPV	0.4	(0.2 - 0.6)
Age <20	1.0	Reference
Age 20-29	0.8	(0.6 - 1.2)
Age 30+	0.7	(0.5 - 1.0)
<High School	0.7	(0.5 - 1.0)
HS Grad	0.7	(0.5 - 0.9)
Some College	1.0	(0.8 - 1.4)
College Degree+	1.0	Reference
1 Child	1.0	Reference
2+ Children	1.7	(1.4 - 2.1)

Public Health IPV Initiatives

- **Sexual Violence Prevention Grants Program:** The SVP Program funds 9 local agencies to conduct community-based efforts to prevent first-time sexual violence perpetration and or victimization.
- **Statewide Strategic Planning Project:** This project, housed in the Michigan Coalition Against Domestic and Sexual Violence (MCADSV), brings together local and state-level stakeholders to develop, implement and evaluate a state-wide sexual and intimate partner violence prevention plan.
- **Rape Prevention and Services Grants Program:** The RPS Program supports 29 local rape crisis centers to provide hotlines, professional training, and community outreach. Its primary goal is to influence social norms in local communities. RPS is housed by the Michigan Department of Human Services.
- **Michigan Violent Death Reporting System:** MiVDRS monitors violent deaths (homicides, suicides, deaths of undetermined manner, and deaths due to legal intervention and unintentional firearm injuries) in Michigan.

IPV Continuing Education Credits

- **Michigan Department of Community Health's MIHP Pregnancy Concerns Online Module:** Includes a presentation on domestic violence. Accessible at http://www.michigan.gov/mdch/0,4612,7-132-2943_4672-106183--,00.html
- **2011 Michigan Injury Prevention Conference:** Oct 27-28, 2011 at Lansing Community College in Delta Township. More details at http://www.michigancenterfornursing.org/docs/injury_reg2011.pdf
- **Detroit Medical Center's Domestic Violence Seminar: A multidisciplinary workshop for nurses and other healthcare providers:** Oct 29, 2011 at the Kresge Eye Institute Auditorium in Detroit. More details at http://www.drhuhc.org/services/nursing/edu.html
- **Michigan Licensed Practical Nurses Association's Fall Seminar Series—Violence Prevention in the Healthcare Setting:** Nov 9, 2011 at the Bavarian Inn Lodge in Frankenmuth. More details at http://www.mlpna.org/newsmgr/anmviewer.asp?a=51&z=2

Past and future editions of the MI PRAMS Delivery newsletter are available electronically at:

www.michigan.gov/prams

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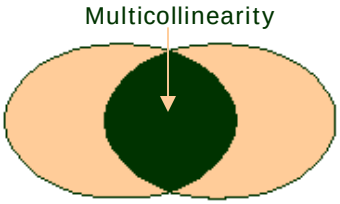
Epi Corner: Multicollinearity

Multicollinearity, or collinearity for short, is a problem that occurs when two or more variables in a regression model are correlated with each other, thus violating the independence assumption required for regression analysis. Another way to describe the situation is that the variables are, at least partially, measuring the same underlying, or latent, construct.

In this issue of the *MI PRAMS Delivery*, the variables for emotional IPV and physcial IPV were tested for collinearity using a statistic known as the variance inflation factor (VIF). The general rule of thumb for logistic regression considers variables with a VIF greater than 2.5 to be collinear with at least one other varible in the model.[7] When linear regression was used to assess the VIF for emotional and physical IPV, both variables demonstrated a VIF of 5.2, indicating the presence of collinearity.

There are several ways to deal with the collinearity problem, depending on the specific situation at hand. In this case, emotional IPV and physical IPV were combined into one variable measuring the number of IPV types each women experienced before or during pregnancy. The new, combined IPV variable sidesteps the need to tease out the latent construct represented by the two separate IPV variables. ◊

Figure 4. Multicollinearity Between Emotional and Physical IPV Constructs



About MI PRAMS

The Pregnancy Risk Assessment Monitoring System (PRAMS), a population based survey, is a CDC initiative to provide data about risk factors for infant mortality and low birth weight.

It is a combination mail/telephone survey designed to monitor selected self-reported maternal behaviors and experiences of mothers that occur before and during pregnancy, as well as early postpartum period. Information regarding the health of the infant is also collected for analysis.

Annually, over 2,000 Michigan women who delivered a live birth are selected at random to participate from a frame of eligible birth certificates. Women who deliver a low birth weight infant are over-sampled in order to ensure adequate representation. The results are weighted

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